



hp StorageWorks performance advisor

Troubleshooting Guide

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Overview

This document provides troubleshooting strategies (appearing in alphabetical order) to help you determine and resolve any problems you may encounter.

0's In The Data Fields

Once data has been collected from the host agent, 0's are generated when the host agent

is unable to produce data for unsupported fields. In Performance Advisor's Components screen, a time stamp (date and time) will appear once a data collection cycle is completed for the selected array.

Port I/O applies to all of the arrays, except the XP256 since the firmware does not produce those data fields. The chart for Port IOs will not display records when all of the port data fields are 0s.

LDEV I/O values vary by array firmware and RMLIB.

Performance Advisor supports the MB/s and LUSE on all arrays, except the XP256.

Support Level Descriptions:

- No support - no data is collected, the thread exits.
- Basic support - PA 1.00.00 through PA 1.05.00 style data, plus four other data types in PA 1.06.00. The mainframe data is the Cache Fast Write, Disk Fast Write, and Cache Mode. Backend transfer was also added in PA 1.06.00.
- MB/s and basic LUSE Support - PA 1.06.00 and greater, the LUSE fields for random and sequential values (I/O and block) are copied into the individual random and sequential fields. They are the same on non-LUSE devices. Our xpinf only sees the head of a LUSE set; this will serve as our entire LUSE read. The GUIs and CLUIs make no distinction for LUSE or single logical device.
- 8-disk RAID group support - requires firmware of at least 21-03-00 and RMLIB version of at least 01.07.01

XP256 Capability Levels

Array Microcode	RMLIB less than 01.03.02	RMLIB at least 01.03.02
at least 52-48-53	No Support	Basic Support
less than 52-48-53	No Support	No Support

XP48 and XP512 Capability Levels

Array Microcode	RMLIB less than 01.03.02	RMLIB at least 01.03.02	RMLIB at least 01.04.01

at least 01-13-18/xx	No Support	Basic Support	MB/sec and LUSE Support
at least 01-12-18/xx	No Support	Basic Support	Basic Support
less than 01-12-18/xx	No Support	No Support	No Support

XP128 and XP1024 Capability Levels

Array Microcode	RMLIB less than 01.06.03	RMLIB at least 01.06.03	RMLIB at least 01.07.01
at least 21-03-00	No support	MB/sec and LUSE support	8-disk RAID groups
at least 20-00-01	No support	MB/sec and LUSE support	MB/sec and LUSE support
less than 20-00-01	No support	No support	No support

Access log files

To reduce the maintenance necessary on the management station, PA has disabled writing to /hpss/apache/logs/access.log. To use access.log for debugging, delete the CustomLog directive. To do so, follow these steps:

1. Go to **Start>Settings>Control Panel>Services**.
2. Click **HpssApache**.
3. Click **Stop**. (**Note:** You will not need to stop your host agents. They will automatically resume once you restart apache service. Errors will show up in nohup.out on UNIX stations; however, the functionality will resume.)
4. Using a text editor, open hpss/apache/conf/httpd.conf.
5. Locate CustomLog/logs/access.log common.
6. Delete the # sign at the beginning of the line.
7. Click **Save**.
8. Return to **Start>Settings>Control Panel>Services**.
9. Click **HpssApache**.

10. Click **Start**.

You will now be able to use access.log for debugging.

Alarms are Not Being Sent Out Via Email

Go to the management station at ... \hpss\pa\properties and edit serverparameters.properties in a text editor. Find the field named SMTP_Servers_And_Ports and put in one or more SMTP server names.

See comments in the file for more details. **Note:** Start and then stop HpssApache, HpssPaSolid, and HpssPaTomcat. If using Command View XP, use Command View's stop-start mechanism to cycle HpssApache.

Browser Compatibility

1. You must have Microsoft Internet Explorer 5.5 or 6.0.
2. For Microsoft IE, you must have JRE 1.4.2. The level can be seen by viewing the Java Console from the browser. This can be enabled using Advanced Options and re-opening the browser.
3. If you are operating HP-UX with Netscape Navigator, see "[Netscape 7.0 or greater: client browser not working on HP-UX.](#)"

Browser Refresh Problem

If the browser is not displaying the table of contents in the online help, follow these steps:

1. Go to **Tools>InternetOptions>General Settings**.
2. Under Temporary Internet files, click **Settings**.
3. Click the **Every time you start Internet Explorer** radio button.

Note: An alternative remedy for this problem is to click **Refresh** in your browser or to run your cursor over the area where the TOC should appear; this will refresh the screen.

Database Attributes Need To Be Configured On The Web Server

... \hpss\pa\properties\DBParameters.properties

These parameters are read when the web server service is started up.

Some items can be altered if you need to gain greater control over access to your data. Remember that these parameters and the database engine itself must stay in agreement or undesirable consequences can result. When making alterations to these values, record the changes elsewhere in a safe, well-known location. This will protect you in the event that the file is subsequently altered. The stored procedures and triggers (Java and SQL) involved have been tested with Solid's embedded database engine with an aim to be JDBC compliant. These parameters are provided here to allow you flexibility if you decide to exercise these options. This code has not recently been tested with other database engines.

This file is for database-specific needs, and may only be edited by the user after installation. The Web server must be stopped and re-started after each change.

The following database values are used, and set in the shown locations:

- DataBaseDriver=solid.jdbc.SolidDriver
- BaseURL=jdbc:solid://localhost:1313
- DataBaseName=
- UserId=dba
- Password=isoMorph

The following formula will help you determine the disk space requirements for Performance Advisor (based on the number of arrays, total LDEVs, collection period, and quantity of performance data):

Free Space = Total required free disk space in MB

History Length = The length of the performance data history in days

LUNs = The total number of LUNs of the system (include all hosts)

Collection Period = Collection period in minutes

Free Space = $1.65 + ((0.000165) * \text{LUNs} * (\text{History Length} * 24) * (60/\text{Collection}))$

History Length = $(\text{Free Space} - 1.65) / ((0.000165) * \text{LUNs} * 24 * (60/\text{Collection}))$

Collection Period = $((0.000165) * \text{LUNs} * (\text{History Length} * 24) * 60) / (\text{Free Space} - 1.65)$

Example:

Free Disk (MB)	History Length (Days)	LUNs	Collection Period (Minutes)
-------------------	--------------------------	------	--------------------------------

2014	127	4000	60
2026	365	1400	60
889	28	4000	30
2026	356	350	15
1475	31	1000	05
1998	28	300	01

First Performance Advisor Page Is Slow To Respond After Code Install

If this is the first time the browser has been used since installing new code on the server, then wait while the browser reads approximately 1 MB of Java code from the server and caches it on the local hard drive.

Host Agent Aliasing

Sometimes a host station is connected to more than one network, and it can have a different name on each network. To change the host name that the host agent looks for, use the HostAgent.properties file.

To specify the host name you want to respond to, add the phrase "Localhost=" and end the line with the name you want to use or with the name you want to be used. For example:

```
Localhost=alias.yourcompany.com
```

Host Station Doesn't Appear In Host Information

1. Check that the management station network address entered in the HostAgent.properties file is correct.
2. Verify network configuration by pinging.
3. Verify host station installation. (The most common error found here is having https selected in the HostAgent.properties file because of selecting SSL during installation. To fix this error, change the protocol type to http. See *Host agent: Verifying that it is operational*, below, for more information.)
4. Verify browser compatibility.

5. Check that a command device exists on the array if you want to collect performance data from the host station.
6. Inspect host station log for errors. The log file contains more information when the line "Logger.LogToFile=true" is added to the HostAgent.properties file. Comment out to remove this line once the system is functioning properly.
7. Re-install the host agent if the previous steps don't solve the problem.

Host Agent: Verifying That It Is Operational

1. If you are running on a UNIX platform, check "nohup.out" which has the software version of the Host agent in the first line.
On all supported operating systems, adding "Logger.LogToFile=true" to "HostAgent.properties" results in printing the software version to "pa.log." This prints out the same version string that prints to "nohup.out."
2. Check that HpssPaHostAgent service is running on Windows, or xppa daemon on UNIX. On UNIX "cat" out ".ourpid" to the screen. Then look for the host agent process ID in the process list.
3. If the host agent isn't running on Windows, verify that java can be run from the DOS prompt by typing "java -version". If the host agent isn't running on UNIX, "cat" out "xppa.start" and verify that its invocation of JRE or JAVA works if it is typed in from the command line.
4. Stop and restart HpssPaHostAgent service on Windows or the xppa daemon on UNIX. On UNIX, enter "xppa.stop" then enter "xppa.start."
5. View the version string and verify that it's the same version as appears on the GUI screen.
6. Turn off logging to pa.log when troubleshooting is complete.

Host Agent(s) Is Not Pointing To The Correct Management Station

The wrong management station name is referenced. Edit the HostAgent.properties file and replace with the correct management station name.

Java Console Has Exceptions In It

Possible causes are as follows:

- The Apache engine is not running.
- The database is empty.
- The exceptions are from earlier problems and are no longer relevant.

To resolve this problem:

- Go to **Start>Settings>Control Panel>Services**.
- Select the **HpssApache** service.
- Select the **Start** button if the "Status" field is blank.
- Clear the Java Console and restore the current page.

Management Station: Verifying That It Is Operational

1. Check that HpssApache, HpssPaSolid, and HpssPaTomcat services are running.
2. Check that JRE 1.4.2 is installed by typing "java - version" at the command line (from the management station home directory). Solid expects this version level.

Management Station Isn't Collecting Performance Data

1. View the Array Information applet under the Configuration tab. Check that the host station name appears.
2. View the Data Collection applet under the Configuration tab. Check that data collection is enabled and that the data collection frequency is between 1 and 60 minutes.
3. Data collection will not appear until the data collection interval has elapsed.

Management Station Is Not Responding

If accessing the management station from Command View XP and two or more network interface cards (ethernet) are installed on the management station, sometimes the PA address will not get resolved. If this happens, enter the following url:

<http://<servername>/pa/servlet/com.hp.xpsl.griddisplay.ArrayGridViewServlet>

See the following list for other areas you can check if the management station is not responding:

1. Check that the management station URL address entered in the browser is correct.
2. Verify Network Configuration via pinging.
3. Verify management station installation.
4. Verify browser compatibility.
5. Inspect Apache logs for errors.
6. Inspect Java console for errors.
7. Stop and restart HpssApache on the management station.
8. Re-install the management station.

Netscape 7.0 or Greater: Client Browser Not Working On HP-UX

If HP-UX isn't working with Netscape 7.0 or greater, you will need to enable java and disable the proxy server if the management station is inside of the firewall. To do so, follow these steps:

1. In Netscape 7.0 or greater, click **Edit**.
2. Click **Preferences**.
3. Click **Advance**.
4. Check the Enable Java checkbox.

If the management station is inside of the firewall and you have a proxy server, you will need to continue with the following steps.

1. Return to **Advance**.
2. Click **Proxies**.
3. Click **View Manual Proxy**.
4. In the "No Proxy For" field, enter the name of the management station.

Note: If your system is configured with Automatic Proxy, contact your network administrator.

Network Configuration

1. Check that the two machines can ping each other by IP address and symbolic name.
2. For each machine, check that the machines DNS IP address returned by nslookup matches the IP address reported by ipconfig.
3. Check basic http file access. Enter
`http://your_server_name/pa/schemas/HostConfigListClient.xml` to see if the web browser can perform simple file access that does not use any Java code.

PA Applets And CLUI Are Not Receiving Performance Data From The Database

Data is not being received even though it is reflected in the database and no errors are noted in the log files or Java console.

To resolve this problem check that the host system's clock is set within one year of the management station's clock.

Raid Manager Library

Trouble with the Raid Manager Library can manifest itself in several ways. The most common symptoms are exceptions or error messages that indicate a shared library could not be found or could not be accessed. What may have happened is that the symbolic link from Performance Advisor to the Raid Manager Library has been broken, or that portions of the library have been removed. **Caution:** Making any changes to RMLIB can disrupt the operation of Continuous Access, Business Copy, or any other application that uses RMLIB.

To recover:

1. Remove any links to the library by removing `/opt/xppa/RMLIB`.
2. Remove the library itself by removing `/usr/lib/RMLIB` and `/usr/lib/libsvrrm.sl`.
3. Remove the PA host station software with `/opt/xppa/uninstall.sh`.
4. Reinstall the host station software by running the `install.sh` script from the tar file.
This reinstalls the proper Raid Manager Library along with the host PA software.

Note: It is also possible to reinstall the Raid Manager Library without reinstalling the host software. To do so, run the `RLinstsh` script from the tar file and provide the directory `/usr/lib` in response to the prompt.

Sun Host Fails To Communicate With The Command Device

The Sun host agent has a memory/file handle error and is unable to communicate with the command device. When a command device is shared by Sun and Windows NT/2000, the user of Windows NT/2000 may not be able to use the disk administration utility since this utility will overwrite the disk partition label on the command device. If this happens, Sun will not be able to communicate with the command device.

Solution:

Configure Sun and Windows NT/2000 with their own command device. By doing so, they will not be able to access the other command device and modify the partition label.

Unable To Browse To The Management Station

When the management station is not known to the DNS server, follow these steps:

An example of the basic process is as follows. Make sure to change the IP address used below to the IP address used by your management station.

1. Add ;192.168.0.1 to the list of addresses to bypass your proxy server. **Note:** Using Internet Explorer as an example, follow this process to add your IP address: Go to **Tools>Internet Options**. Select the **Connections tab**. Click **LAN settings**. Click **Advanced**. In the Exceptions text box, place your cursor at the end of the domain list. Add a semicolon and your IP address, including the asterisk if you want to include everything within the last octet. Click **OK**.
2. Close and then re-open the web browser.
3. Enter <http://192.168.0.1/pa/>. **Note:** Make sure to include the forward slash at the end of the URL.
4. Enter the username and password of paxp:xparray (unless you have changed it from the default) and save, if desired.
5. If the browser returns with an unresolved hostname for http://<servername>/pa/ change it to <http://192.168.0.1/pa/> and then use that URL. Doing so will take you to the management station's default PA page.

Uninstalling PA and Command View XP Requires Reboot

The following two scenarios will require a reboot:

1. PA was operated as a standalone product and subsequently uninstalled.
2. Command View XP was installed after you installed PA. Subsequently, Command View XP was uninstalled, then PA was uninstalled.

It is important that you reboot the machine to completely remove the Apache service. Otherwise, this service will not be removed and problems may arise later.

Using LINUX or UNIX With Netscape

If you are using a LINUX or UNIX machine with Netscape and are unable to download the plugin, you need to make sure that your JAVA_HOME environment variable is correctly set.

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